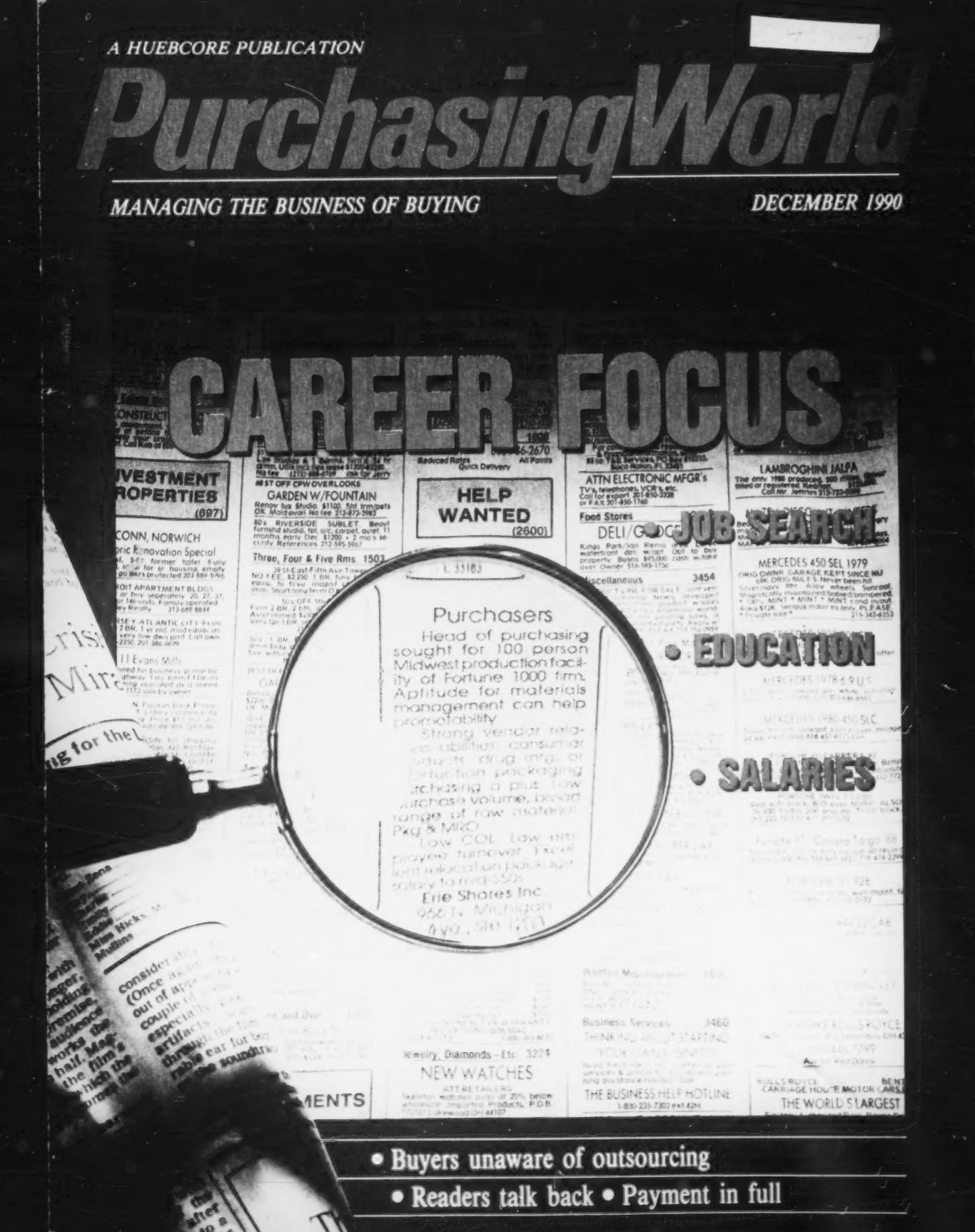
A HUEBCORE PUBLICATION

PurchasingWorld

MANAGING THE BUSINESS OF BUYING

DECEMBER 1990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Head of purchasing sought for 100 person Midwest production facility of Fortune 1000 firm. Aptitude for materials management can help profitability
Strong vendor relations abilities; consumer products drug mfg. or retail packaging purchasing a plus. Low purchase volume, broad range of raw materials Pkg & MRO
Low COL Low employee turnover Excellent relocation package salary to mid-$50s
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Ave., Erie, PA

- Buyers unaware of outsourcing
- Readers talk back • Payment in full

CONTENTS

December 1990, Vol. 34, No. 12

COVER STORY

30 Let the NAPM do the walking
When it's time for a new job, who ya gonna call? *PurchasingWorld* has some ideas for you to pursue.

31 Purchasing salaries throw some curves
Our annual salary survey showed that, on average, annual wages advanced 5.25%, but there were some unusual results, too.

36 Old pro pitches purchasing
Editorial Consultant Paul Farrell, one of the profession's most capable advocates, addresses the future of purchasing careers.

Forty-year purchasing veteran adds fuel to the purchasing revolution. *Page 36*

Sit back and relax while the NAPM and local PMAs help you find your next job. *Page 30*

FEATURES

40 Fundamentals of strategic supply management
Five essential areas to be addressed for successful materials management.

44 Special buys need standard specs
Purchasing pros can save dollars by standardizing specifications—even for special parts.

54 What vendors wish buyers knew
Sales representatives and executives in office products talk about how buyers can be more effective in this specialized arena.

57 Abrasives weather the storm
An industry leader talks about the near-term future for abrasives, and provides a grinding primer for buyers as well.

64 The assault on costs
In the transportation field, higher costs are coming for end users and a profit squeeze for carriers.

DEPARTMENTS

4 PW Pointers

6 Editorial

10 Readers talk back

12 Ask Dr. Ken

14 Transportation
Same coin, different sides

15 PW Predicts
Fleeting glory; recycled PVC; McDonald's moves to paper.

21 Business DataTrak
Solving the economic mystery; metals scene; city growth; energy spillover.

29 Purchasing software
A byte of this and a byte of that

48 Negotiations
Buyers unaware of outsourcing struggle

58 Office products

60 New products

62 New literature

65 Advertisers' index

68 Classified

68 Purchasing and the law
Payment in full

PurchasingWorld

Strategic vision

Mike Doyle is a man of great passion when it comes to talking about the challenge to purchasing professionals to become strategic procurement management (SPM) thinkers.

Those who attended this year's Procurement Forum V of the Strategic Procurement Management Institute at the University of San Diego under Dr. David K. Burt got a glimpse of that vision.

They felt the power of ideas that have already changed the way in which leading U.S. manufacturers like Honda of America, General Electric, Hewlett Packard, Xerox, and Compaq Computers look up and down their value chain of customers and suppliers to create strategic alliances.

Mike Doyle bridles at the suggestion that purchasing professionals are operating at any level less than that which is needed to give them sustainable competitive advantage in today's global business environment.

His vision is daunting in its implications. It provides a guide to what an ideally integrated purchasing function should look like when it is operating in real partnership as part of the strategic procurement team.

Try this self-evaluation yardstick as a way to benchmark your own department. It was developed by Dr. Burt and Mike Doyle as a way for executives and members of the procurement team to measure their progression toward strategic procurement management.

Stage 1—Reactive

Processes paper, functions clerically, staffed from receiving dock, acts in reactive/crisis mode, reports at very low level;

Stage 2—Mechanical

Staff may have college education, paperwork processed by computer, reactive and transaction driven, purchases on spot market, measures price reductions, reports at low level, considers only supply, price, quality;

Stage 3—Semi-professional

Professional staff, uses proactive approach, negotiates long-term contracts, occasionally measures cost of ownership, considers suppliers resources, reports to higher management, offers cross-functional support, utilizes training and education, authority to make purchasing decisions;

Stage 4—Professional and strategic

Employs integrated materiel strategy—including activity-based purchasing, uses concept of velocity in development and production, measures continuous improvement, uses materiel as competitive weapon, has a global view, measures "all-in-cost," G.M. of outside shop, centralizes purchasing strategy but decentralizes purchasing activity, shares purchasing power with management.

There may not be many fours out there, but there is no excuse not to be a solid three. For more on how to make progress to Stage 4, please see Mike Doyle's article in this issue (the second in this series) on the Fundamentals of Strategic Procurement Management.

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PW PREDICTS

Fleeting glory?

Warriors returning from battle and athletes after a triumphant performance share one understanding; all glory is fleeting. According to most, the glory associated with our nation's longest peacetime expansion is now fading. Though I agree that few things stand time's test forever, in uncertain times, situations are rarely as simple or as bleak as the consensus indicates.

First, let's take a closer look at the definition of recession. The historical rule of thumb is two quarters of negative growth in inflation-adjusted gross national product (GNP), but that isn't always the case. The 1980 recession only had one negative quarter. While the National Bureau of Economic Research's own definition is somewhat clouded, it emphasizes a pervasiveness of decline in a wide number of economic data series. Many sectors have been struggling for some time now, including autos, furniture, residential construction and non-auto manufacturing, but the economy has continued to maintain its slow-growth progression. Quarterly changes such as the recent second-quarter GNP fall-off are necessary but not sufficient in declaring an economic turning point.

The underlying fundamentals still suggest a slow rate of expansion through 1991, given that global leaders resolve the Iraqi situation by early next year. Assuming this, a number of factors will push the domestic economy forward over the next 12 months: despite a significant drop in confidence, no sharp decline in spending has come about, implying that consumer spending habits die hard; business spending for capital equipment will maintain its modest advance, as firms strive to improve productivity and increase market share; the export outlook, which is already strong, keeps improving as the value of the dollar continues to fall relative to other currencies; once the Iraqi aggression is erased, a surplus of oil will appear on the world market, pulling fuel prices and inflation rates down; and the Federal Reserve is facing two legitimate reasons for easing monetary policy.

The first of those reasons is that Federal Reserve Chairman Alan Greenspan has mentioned an easier monetary policy would be appropriate if fiscal policy were tightened, which the new budget accord implies. Second, the Bush administration doesn't want a recession and their Fed-bashing will begin to exert more pressure, as will public sentiment, incited by the rising of unemployment. Monetary fine-tuning seems likely, especially since in the beginning, a mild recession looks the same as a severe one. Look for the Fed to reduce the federal funds rate by at least 25 basis points (100 basis points is 1%), once the dust settles from the release of fourth-quarter GNP numbers.

No change in the Fed's strategic plan (maintaining slow growth so as to reduce inflation to practical zero), however, is forthcoming. Therefore, once domestic markets rid themselves of the negative Middle East shock, the Fed will actively adjust money supply to keep it consistent with slow growth.

Further worsening in employment is likely, but any additional deterioration does not necessarily imply recession. The unemployment rate hasn't reached its ceiling yet and could top 6%. But, given that the natural rate is near 5.5% in a slow-growth economy and that the existing rate was held artificially below that level for quite some time, human resources won't likely be reallocated appropriately (unemployment of 5.5%) until mid-1991.

At the National Association of Business Economists' Annual Meeting last September, Geoffrey Moore, a member of the Business Cycle Dating Committee, reported that only two components of their four-step signaling process had turned negative. Since the system only confirms recession with a roughly six-month lag, and the data was actually improving before Iraq's invasion of Kuwait on August 2, no recession declaration seems possible in 1990. The good news, however, is that the average length of post-World War II recessions is 11 months, so that by the time we officially find out we are in a recessionary period, it will most likely be half over.

If the economy does worsen to the point of serious economic correction, it will be a Saddam shame, with the recession's duration and depth also being dependent upon the uncertainty caused by the Middle East.

By John W. Sheridan
Chief Economic Editor

Recycled PVC opportunities

Overview: as much as 494 million lbs of PVC could be diverted from our annual solid waste stream, according to a recent study by the University of Toledo's College of Engineering. Although Europeans have been engaged in vinyl bottle recycling for years, only 5.2 million post-consumer-use pounds were recycled domestically last year.

Roughly one-third of the total amount of plastic sold, or approximately 22 billion lbs, finds its way into the solid waste stream every year. Vinyl bottles account for less than 1% of the country's 360 billion lbs of annual solid waste. However, as the survey's project director Dr. Robert Bennett commented, "The potential demand for recycled PVC is clearly there; that isn't necessarily the case for other materials in the waste stream."

Demand: the study focused on uncovering consumption applications that meet two criteria: non-food contact and durable product uses (which remove the waste from the system for years to come). Over 100 major applications were identified. In terms of volume, the greatest potential exists in building and construction (sewer pipes and vinyl siding). Uses for recycled vinyl bottles in the consumer and institutional sector include household chemical containers, office accessories and garden hoses. Refuse containers and floor/machinery mats were uncovered as major industrial uses.

Supply: approximately 207 million lbs of blowmolded bottles, using PVC, are produced each year, which is well below the study's identified potential demand of 494 million lbs. As Roy Gottesman, executive director of the Vinyl Institute (Wayne, NJ) stated, "The point of the study is that there will be a receptive, sustained market for whatever we can separate and recycle."

Outlook: if the recycling potential of vinyl plastic bottles is to be achieved, collection and sortation technologies must be improved, which seems inevitable.

Polyvinyl chloride recycling projections

million lbs.

	1989 Actual market	Recycling potential market %	volume
Calendering	974	5	50
Extrusion	5267	7	349
Injection molding	401	5	19
Blow molding	207	15	31
Compression molding	28	11	3
Dispersion molding	201	1	1
Dispersion coating	373	1	2
Export	802	5	40
Other	54	0	0
Total	**8307**	**6.0**	**494**

* Volume total does not sum due to rounding

Barge operations stable, rebounding

The market has been engaged in a major transformation, caused primarily because of overbuilding in the late 1970s and early 1980s. With demand growing and barge supply back in line, market participants are once again optimistic about future performance.

The transport of chemicals is one factor solidifying barge traffic. According to the U.S. Army Corps of Engineers, domestic shipments in the chemical sector are up 25% since 1985. This, and the fact that utilization rates have rebounded from 25% in the mid-1980s to nearly 90% today, are stimulating some chemical companies to add to their fleets through the purchase of new barges.

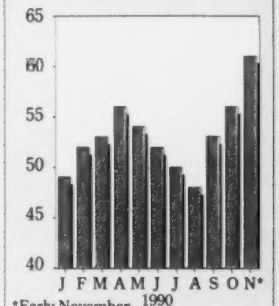
Plastics prices still not resting

One result of the Gulf: domestic plastic producers have been raising prices, and it's likely they will try to raise them some more in December. Higher feed stock costs (for ethylene, propylene, styrene, and vinyl chloride) are the reason behind the producers' needs to up tabs.

In early November, the market price for low-density polyethylene was 46-48¢/lb, up 10¢ over the price it commanded in late August. The story was the same for high-density polyethylene and polystyrene. Both have risen over 10¢ in less than three months, and are now at 53¢/lb and 61¢/lb. Whether higher prices will stick depends on whether current orders from buyers are aimed at building inventory. With almost everyone expecting business activity to slow at any moment, customers may start to temper new orders, which will begin to put a lid on prices.

Polystyrene

¢/lb, monthly average



*Early November 1990

McDonald's moves to paper bags in '91

Beginning in the first quarter of 1991, McDonald's will no longer be using bleached kraft paper in their carry out bags. In the firm's continuing attempt to help reduce packaging waste, it has notified suppliers that it will switch to unbleached kraft paper in its packaging. Moreover, by the second quarter of next year, the company wants its natural kraft bags to possess 100% recycled content. McDonald's Happy Meal and napkins already use recycled paper.

Hard materials expanding

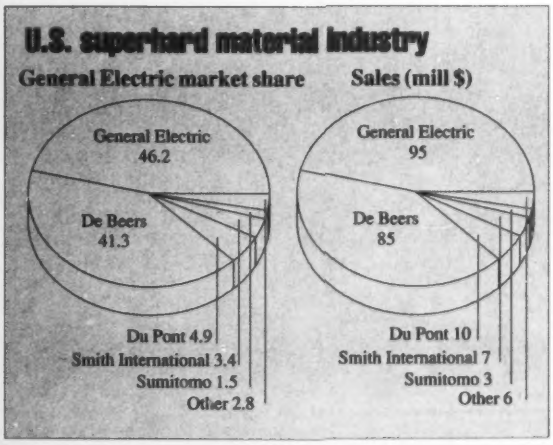
Overview: Following the last recession, sluggish performance continued to encompass the hard (tool steel, ceramics, and cemented carbides) and superhard materials market (industrial diamonds and cubic boron nitride). In the past two years, however, yearly demand growth has topped 14%. In 1989, the market's value exceeded 1.7 million dollars, boosting the 1982-1989 annual rate of increase to 5.2%.

Demand: According to a recently released study by Leading Edge Reports, Cleveland, U.S. hard material consumption rose from 364,400 tons in 1982 to 450,000 tons in 1989. Heavy capital spending in the latter half of the 1980s helped drive tool steel, the oldest and largest hard material category, which witnessed annual volume growth of 5% from 1982-1989.

Meanwhile, U.S. superhard material consumption fell just short of 100 million carats in 1989, up from 42 million carats in 1982. Between 1982-1989, industrial diamond demand rose 11% annually. Even greater demand, however, existed for cubic boron nitride, where yearly consumption soared 43%. Though the volume of these two superhard materials grew nearly 13% annually during this period, the value of their market increased less than 2% a year, reflecting generally weak prices.

Supply: The 13 largest producers of tool steel account for only 26% of domestic sales, with imports claiming nearly 65% of the market. In the cemented carbide material industry, Kennametal is the market leader, with 28% of the market. In hard ceramics, Norton and Exolon-ESK make up 49% of the market.

Outlook: Changes in manufacturing methods (factory automation and equipment investment) and materials (replacement of carbon steel) will continue to propel hard (2.7% annually) and superhard material (8% annually) demand this decade.



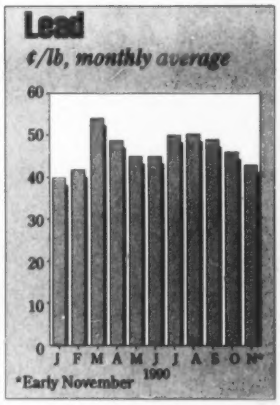
Plastic process machinery growing

The Freedonia Group, Cleveland, expects plastics processing machinery shipments to move up 6% annually over the next five years. Their research suggests, however, that imports will remain a major concern. The report also anticipates the transformation of the industry's technology, which in the future will employ more enhanced control systems to monitor production variables and perform diagnostic checks, approaching zero-defect manufacturing.

Within the industry, machinery shipments for injection molding, already the market's largest segment, are forecast to be the strongest area of growth, advancing nearly 7% annually over the next half-decade. Following closely behind will be machinery demands for extrusion, blow-molding, thermoforming and compression molding, where per-year shipments are forecast to move up 5.3%, 4.7%, 5.9% and 4.8% through 1994, respectively.

No seasonal firming for lead

Traditionally, the fall is associated with a firming of lead prices, but not this year. With lead buyers seemingly relying on inventory, prices are easing, now down near 43¢/lb. The combination of steady growth in demand and still tight supplies hasn't been able to slow the metal's price descent. Stimulating this bearishness is the belief that market supply disruptions will soon be erased, potentially allowing quite a bit of supply to surface in the near future.



East Europe steel facilities lacking

While there is a lot to be said about potential, the challenge facing Eastern Europe to get up to speed in steel production is significant. While Eastern Europe's steel industry performed well during the 1970s, it grew very little in the 1980s, especially with regard to continuous casting (which is essential for high-quality steel production). Last year the United States cast 65% of its steel continuously; Japan cast 93%. East Europe casting looks something like this: Bulgaria 15%; Czechoslovakia 9%; East Germany 41%; Hungary 56%; Poland 77%; Rumania 34%.

Forecasting preview

Next month *PurchasingWorld* will once again deliver its Economic Summit, the most comprehensive forecasting guide in the industry. The latest outlook and policy survey from the National Association of Business Economists (NABE), however, is an excellent preface.

Data expectations: gross national product (GNP) growth has been roughly halved for 1990 from the previous forecast, with the new consensus estimate at a positive 1.2%. The 1991 rate of growth in GNP was also pared, from 2.4% to 1.4%.

In terms of the GNP components, the NAPM's survey participants foresee continued growth in capital and consumer spending, both this year and next. Improvement is also expected in real net exports over the forecast horizon (see chart).

With regard to the civilian unemployment rate, further worsening is anticipated, progressing from an annual average of 5.5% in 1990 to 5.9% in 1991. A rebound in corporate profits, however, is predicted next year, which should work to lower unemployment numbers in the second half of 1991.

Good news is signaled in the inflation numbers. While the oil shock has boosted the consumer price index forecast from 4.7% to 5.8% in 1990, the 1991 level is expected to fall back below 5%. If the Fed maintains its slow-growth approach to monetary policy, and there is no reason to doubt that they will, a persistent, gradual retreat in inflation is possible.

How probable is recession: while 60% of the economists expect a recession to begin within the next 36 months, only 50% believe one will occur within the next 12 months, with the fear of recession concentrated in the fourth quarter of 1990 and the first quarter of 1991. However, both these readings are significantly higher than the previous survey (taken prior to the Middle East crisis).

National Assoc. of Business Economists

Median forecast

	Actual 1989	Forecast 1990	Forecast 1991
Real GNP[1]	2.5%	1.2%	1.4%
Consumer spending[1]	1.9%	1.0%	1.4%
Capital spending[1]	3.9%	0.9%	1.2%
Net exports[1] (bill)	-54.1	-38.0	-31.0
Federal budget deficit[2]	-152.1	-165.0	-171.0
Corporate profits[2]	-4.4%	-2.7%	3.0%
Unemployment rate[3]	5.3%	5.5%	5.9%
Industrial production[3]	2.6%	1.1%	1.6%
Housing starts[3] (mill)	1.4	1.3	1.3
Domestic auto sales[3] (mill)	7.1	6.8	6.9
Consumer price index	4.8%	5.3%	4.9%
GNP deflator	4.1%	4.3%	4.4%
Treasury bill (3 mo)	8.1%	7.6%	7.0%
Treasury bonds (30 yr)	8.4%	8.6%	8.3%

1 = annual averages

2 = nominal magnitudes

3 = real magnitudes

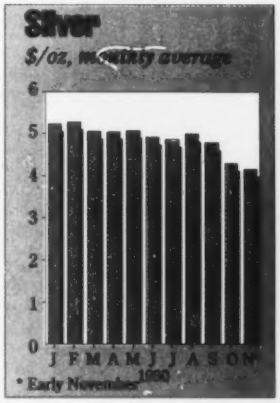
Toyota driving supplier performance

In October's final week, Toyota held its first-ever import suppliers meeting. Roughly 200 representatives from 53 American automotive parts manufacturers were in attendance. The encounter, held in Toyota City, Japan, was designed to expose U.S. manufacturers to Toyota's basic policy on product development and production, and is part of the firm's new "Toyota Step Up Program." The company hopes the program will simultaneously accomplish two things: increase design-in opportunities for foreign suppliers; and drive supplier performance in the area of quality.

Precious metal tabs mixed

The weakness in silver and platinum seems to be influencing gold's price of late. In fact, gold has already eased into the low $370/oz range and some analysts say it might not reach bottom until it hits 360/oz. One trader commented that if the domestic price of silver falls below $4/oz (currently at $4.15/oz), gold might slip even lower. Silver demand for industrial applications is slipping, and fabricators are backing off from inventory accumulation, preferring to let the market act as a warehouse.

The recent rebound in platinum, however, should lend some support to gold.



The easing of recessionary fears and oil prices, along with a spurt of Japanese buying, has stimulated a roughly $40 firming of platinum, to $440/oz. While silver and platinum prices will mostly be tied to global recessionary concerns, the future price of gold should remain heavily dependent upon worldwide inflation levels and Middle East expectations.

IBM not the same overseas

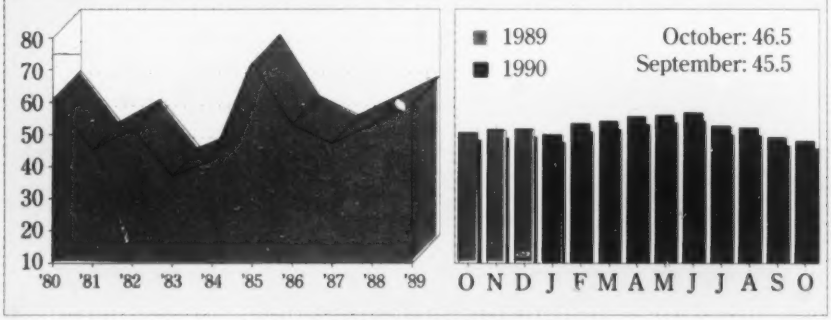
In the U.S., IBM Corporation accounts for more than 80% of the mainframe computer market. On the other side of the Atlantic, however, IBM's market share has room for improvement. According to Computer Intelligence, La Jolla, CA, European home-grown computer makers are staying competitive. Europe's mainframe business that IBM controls: Great Britain 68%; Belgium 71%; France 51%; West Germany 56%; Austria 58%; Spain 62%; Switzerland 59%; and Italy 67%.

BUSINESS DATATRAK

By John W. Sheridan, Chief Economic Editor

N. A. P. M. business barometer

Based on five indicators (employment, inventories, new orders, production, vendor performance)



KEY ECONOMIC TRENDS

Solving today's economic mystery

Those predicting recession believe that if it doesn't begin in the third quarter, it most certainly will begin in the fourth quarter. Negative output, as measured by inflation-adjusted gross national product, wasn't observed in the preliminary report of third-quarter data, which was up 1.8% (see chart). Moreover, underlying clues suggest that a classical business recession might not be as imminent, at the present time, as many of my colleagues believe.

Clue 1: offsetting the gloom projected from the consumer attitude surveys, retail sales climbed in September (see chart). No matter how you look at it, consumer spending is still growing, and since spending from consumers accounts for two-thirds of GNP, the drag applied by exports, business investment and government (the components which make up the other third of GNP) would have to be significant to incite a downturn.

Clue 2: after the first-quarter inventory drawdown, the second-quarter build was weaker than anticipated. It is expected that the third quarter will benefit from a further increase in inventory investment. Despite this inventory increase, however, inventory-to-sales (I/S) ratios remain favorable. With less than one-and-a-half months of inventory on hand, the traditional inventory cycle seems remote. Neither the level of stocks nor the pace of inventory investment suggests the need for production cuts, which incite rising unemployment, further aggravating any economic slowdown.

Clue 3: in the first half of 1990, inflation-adjusted nonresidential fixed investment (which includes business structures and equipment) was up almost 2% over the first six months of 1989. Not only is capital spending solid, it should strengthen. Driving investment will be the perpetual quest for productivity improvement, and the concern over market share, which always accompanies tough business conditions.

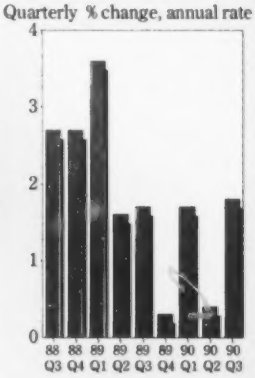
Clue 4: exports will continue to be boosted by strong demand growth from our major trading partners and the still-weakening value of the dollar *versus* foreign currencies (see chart). The full effects of a falling dollar are felt with a lag of 3-12 months, implying that next year's net export picture is bright.

Clue 5: speculating that cutbacks in auto produc-

Leading Indicators

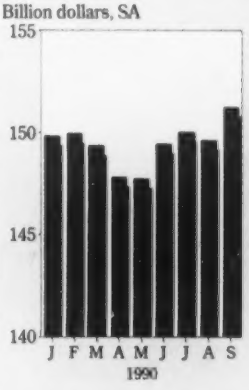
Real GNP

Quarterly % change, annual rate



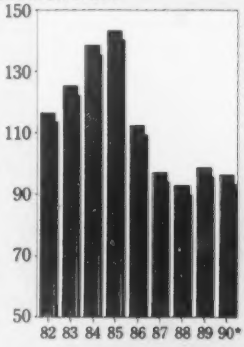
Retail sales

Billion dollars, SA



Trade weighted dollar

Index 1973=100

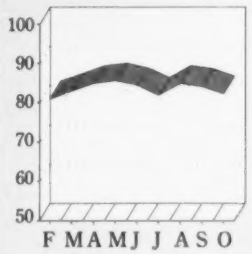


*Recent

Source: Dept. of Commerce, BEA; Board of Governors.

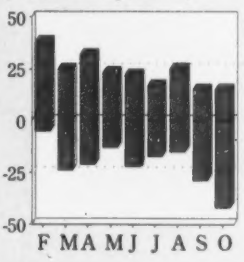
Steel

Operating rates

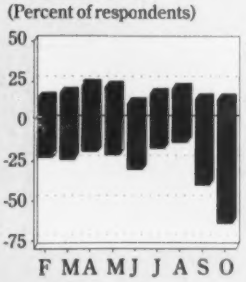


Inventories
(months supply on hand)

Demand (Steel Service Centers)
(Percent of respondents)



Demand (NAPM)
(Percent of respondents)



Source: Steel Service Center Institute
NAPM Steel Buyers Committee

tion will be strong enough to create a mild recession in the industrial sector seems in error. While auto sales are still disappointing, they aren't as low as the recession-induced numbers of 1982, when domestic car sales registered 5.8 million for the year. September's seasonally adjusted annual rate of domestic car sales totaled 7.6 million, only slightly below the 7.8 million rate of September 1989. Moreover, industrial production figures for July and August have been revised up and now show gains, while industrial production in September came in at up 0.3%.

The Christmas season will reveal the final clue for the near-term performance of the economy. If consumer spending holds up, the longest peacetime expansion could reach its 107th month of growth next October, which would establish a new expansion record.

METALS SCENE

Awaiting deterioration

The Steel Service Center Institute (SSCI), Cleveland, reports that September's average daily shipping rate (ADSR) climbed 8.9% over August's active level. Supporting the advance were strong performances by alloy products, up 12.8%, carbon bars, up 11.9% and carbon tubing, which rose 11.8% for the month.

September's solid performance put the finishing touch on a good third quarter for service centers. While the ADSR in the third quarter was down almost 4% from the level witnessed during the second quarter of this year, on a year-ago basis, the third-quarter figure is up 1.3%.

Raising buyer concern, though, is September's surge in the service centers' inventory-to-shipments (I/S) ratio, which climbed to 3.60. August shipments, however, which incited a plunge in the I/S ratio to the lowest level of the year (3.04), provide at least a partial explanation. As Andrew G. Sharkey, SSCI president, pointed out, "The inventory build may be due in part to spot buying to fill inventory gaps that resulted from an unusually strong August shipping month." Moreover, Mr. Sharkey believes that "inventories remain in balance with current shipping levels."

In spite of September's strong showing from service centers, optimism about the near-term performance of steel is deteriorating. In the SSCI's latest survey, 53% expect fourth quarter economic activity to decline. Even more pessimistic are respondents of the National Association of Purchasing Management's Steel Committee, where 64% expect general economic activity in the fourth quarter to fall off.

The news isn't any better when one asks industry analysts about their prognosis. Most concur with the perceptions of those actively engaged in the market: beginning in the fourth quarter, steel performance will weaken.

Many thought the uncertainty brought about by the Middle East would stall industrial activity, and with it steel production, but thus far, global activity hasn't plunged. How much longer output from Japan and the U.S. can continue to support figures on world steel activity, however, remains to be seen. The as-of-yet-not-so-obvious deterioration in the U.S. is clearly present in other parts of the world: Belgium, Germany, France, Australia, the United Kingdom and Eastern Europe. In Canada, half of that country's steelmaking capacity has been idle since August, due to strikes at Stelco and Algoma.

Returning to the domestic front, steelmakers are seeking to push prices up roughly 5% in the fourth quarter, but demand fundamentals suggest the recent price push will subside quickly.

Import prices
(Compared to domestic)

STEEL BUYERS
ABOVE 21%
SAME 28%
SLIGHTLY BELOW 48%
SUBSTANTIALLY BELOW 3%
SERVICE CENTERS (CARBON)
ABOVE 5%
SAME 71%
5-10% BELOW 22%
11-20% BELOW 2%
OVER 20% BELOW 0%

REGIONAL PERSPECTIVE

City growth raises concern

Alphametrics Corporation has just released its second-quarter performance report on the 75 largest metropolitan areas nationwide. Their economic performance index for cities (EPIC) shows the same general slowing which was observed at the national level in the second quarter, as reported in the gross national product (GNP) figure (which was up 0.4%).

The effects of inventory rebuilding and a short-lived spring burst in manufacturing were clearly visible in the latest EPIC results. In terms of quarter-to-quarter improvement, large Ohio cities led the way. In fact, six of the top 12 performing metropolitan areas were located in Ohio: Cleveland, Columbus, Cincinnati, Dayton, Youngstown and Toledo. Interestingly, Cincinnati and Columbus are two of only 29 cities to have actually added manufacturing jobs since the summer of 1989. And, while manufacturing job growth has remained flat in Cleveland, overall employment has advanced 3% in the past year, signaling that city's renewed vitality.

The data compiled by the Bala Cynwyd, PA, researchers, also indicates that an oil patch revival was in progress prior to the Iraqi-induced soaring of oil prices. Oklahoma City and Tulsa were both in the top ten in second-quarter performance, while the Texas cities improved from the bottom third to the middle third, in terms of their EPIC ratings.

In the southeast, Charleston is living proof that natural disasters are good for future economic performance. The rebuilding required from last fall's hurricane has boosted Charleston's EPIC rating to fourth on a year-over-year basis, which is significantly higher than its 1989 position of 54th. Florida, with Miami, Orlando, Tampa and West Palm Beach leading the charge, is performing well, due to growth in the transportation, finance and service industries.

Western performance continues to be, regionally speaking, the best, with many cities there continuing to add people and jobs. Mr. Charles Renfro, Alphametrics' chief economist, commented, "No western cities are to be found in the bottom 25. Furthermore, seven of the top nine fastest growing cities over the past two years are in the West."

Clearly associated with economic performance is the ability to generate new jobs. Since the summer of 1989, the country's top eight cities for job growth: Las Vegas, Fresno, Seattle, Salt Lake City, Sacramento, Portland, Honolulu and Phoenix.

Through the second quarter, northeastern and mid-Atlantic cities had yet to reach their trough. While the Washington and Baltimore economies displayed slowing, conditions in Philadelphia, Hartford and New York, which are barely positive on a year-over-year basis, turned decidedly worse during the second quarter. Pockets of strength inland, at Rochester, Harrisburg and Albany, however, persist.

While 56 of the 75 largest cities in the U.S. experienced worsening performance in the second quarter, as measured by the EPIC system, only nine of the 75 possess a negative EPIC rating on a year-over-year basis. Are the second-quarter numbers a signal of recession? Probably not. The second quarter performance was almost a mirror of the first quarter, when 58 cities showed some positive growth. The best guess is that the second quarter was simply a transitional quarter with respect to a large number of resources. Within the framework of a slow-growth national environment, such periods of reallocating resources should not induce panic, only awareness.

Top 15 growth cities
Percent change, second quarter

Youngstown, OH	7.43
Toledo, OH	6.02
Charleston, SC	3.74
Columbus, OH	2.70
Fresno, CA	2.01
Cleveland, OH	1.93
Tulsa, OK	1.84
Dayton, OH	1.64
Portland, OR	1.40
Oklahoma City, OK	1.11
Miami, FL	1.07
Cincinnati, OH	1.07
Salt Lake City, UT	0.93
Orlando, FL	0.83
Honolulu, HI	0.81

Cities of interest
percent change, last 12 months

Atlanta, GA	3.21
Phoenix, AZ	3.08
Kansas City, MO	3.02
Cleveland, OH	2.78
San Francisco, CA	2.41
Milwaukee, WI	2.31
Denver, CO	2.00
Minneapolis, MN	1.96
Birmingham, AL	1.63
Dallas, TX	1.32
Richmond, VA	1.22
Chicago, IL	1.00
Hartford, CT	0.51
Detroit, MI	-1.00
Boston, MA	-2.20

CURRENT PRICES

Energy spillover

The inflation indexes are simply confirming the obvious: energy costs continue to soar. Skyrocketing fuel prices have now pushed the consumer price index above 6% on a year-over-year basis, which is up significantly from 1989's 4.7% level and the weakening levels witnessed just prior to Iraq's August 2 invasion of Kuwait. With respect to producer prices, that index is also near 6% on an annual basis, nearly three times the level observed for the first six months of 1990.

Worse yet, each day the Middle East commotion persists, the spillover effects from energy's impact on production, packaging and distribution get magnified. Fortunately, most of the price pressures to date have remained concentrated in the energy and energy-intensive industries (chemicals and plastics). But, as the Middle East and oil situations boost prices, they are also discouraging industrial activity.

It is clear that we are now engaged in a significant, though temporary, energy inflation. In contrast, no sustainable *non*-energy inflation is surfacing. In fact, most industrial commodity price outlooks, excluding energy, have been little altered from their pre-invasion levels.

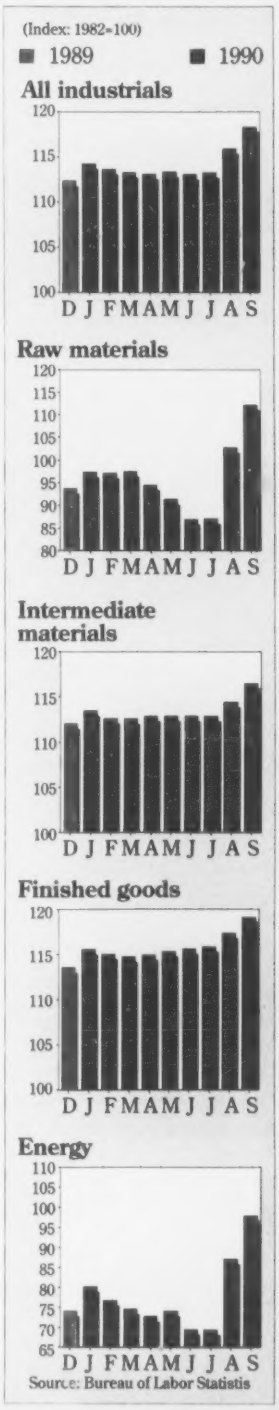
Finally, recently released data from the U.S. Department of Energy shows that between July 30 and October 15, average gasoline prices, excluding taxes, rose by 46-58 cents per gallon in western European countries, 71 cents per gallon in Japan, and 27 cents per gallon here at home. Interestingly, this rise in U.S. retail gasoline was roughly 30 cents a gallon less than the rise in crude oil prices during the same period.

This month's breakdown

Index 1982=100

	Latest level	Month ago	Year ago
Bearings	130.7	-0.2	4.2
Bolts, nuts, etc.	117.5	0.0	2.5
Chemicals, inorganic	112.3	-0.1	2.2
Chemicals, organic	115.3	5.5	2.6
Concrete products	114.0	0.3	2.2
Corrugated containers	107.7	-0.2	-4.7
Cutting tools, small	113.1	0.0	1.2
Electrical lamps (bulbs)	130.7	0.0	4.4
Electronic components	117.4	-0.3	-1.7
Fans and blowers	124.2	0.3	3.7
Foundry and forge products	117.5	0.2	2.0
Fuel oil (residual)	59.3	30.6	26.7
Furniture, commercial	133.7	0.1	2.2
Gasoline	92.4	12.5	42.4
Glass, flat	106.8	-0.6	-2.1
Glass containers	120.9	0.2	4.5
Gypsum products	103.1	0.6	-5.3
Hand tools	135.2	0.0	5.1
Hand tools, power driven	121.6	0.1	3.9
Industrial furnaces	127.8	0.4	2.2
Integrating and measuring instruments	127.3	0.3	5.7
Internal combustion engines	121.4	0.0	4.7
Lubricating oil	117.9	1.9	5.3
Lumber millwork	130.5	0.2	2.0
Material handling equipment	115.8	0.3	2.7
Metal containers	114.2	-0.1	1.8
Metal mill shapes	132.0	-0.3	-3.7
Metal tanks	114.0	-0.3	2.3
Metalworking machines	123.3	0.2	3.6
Motors and generators	133.2	-0.4	2.7
Motor trucks	123.6	-3.3	0.6
Nonferrous metals	139.1	1.6	-0.3
Office and store equipment	108.7	-0.1	-1.1
Paperboard	133.1	-0.2	-4.7
Paper boxes and shipping containers	129.3	0.0	-1.3
Paper office supplies	121.4	0.0	-0.7
Paint	125.4	0.1	3.9
Plastic resins	123.6	1.1	-2.0
Precision measuring tools	128.8	0.0	2.8
Pumps and compressors	120.1	0.3	2.7
Refactories	122.9	-0.1	2.9
Rubber belts and belting	118.8	0.0	2.8
Scales and balances	109.4	0.3	2.4
Switch gear	125.3	0.6	4.9
Textiles, synthetic fibers	107.3	0.8	1.3
Textiles, gray fabrics	117.2	-0.2	1.2
Tires and tubes	97.1	0.6	-0.2
Transformers and power regulations	120.8	-0.2	1.9
Welding equipment	128.7	0.7	5.1
Wire and cable	146.3	2.0	-0.4

Industrial prices



Source: Bureau of Labor Statistis

PROCUREMENT

Purchasers see economy slowing

The Purchasing Manager's Index (PMI) has now been in a state of decline for four consecutive months. Worse yet, its October reading of 43.3 was the lowest since December, 1982, when the leading index resided at 42.8. While a reading below 50 traditionally signals decline in the manufacturing economy, October's level is also below 44, indicating recessionary conditions for the economy overall. A PMI reading of below 44 for the remainder of the year would suggest a decline in real gross national product (GNP) for the fourth quarter, with that figure slowing to about 1% for the year overall. Chairman of the National Association of Purchasing Management's Business Survey Committee, Robert J. Bretz, commented, "With new orders the weakest in eight years, immediate relief does not appear likely."

Though new export orders continued to advance in October, production declined for the third consecutive month, new orders showed decline for the fourth consecutive release, employment stood below 50 for the 20th consecutive month, and the Price Index rose to 76.4, its highest level in more than two years.

While the nation's purchasing managers feel the current price runup is nearly 100% attributable to the Middle East commotion, many also feel that some suppliers are using uncertainties from the Gulf to exploit buyers, increasing prices even when costs to date can't justify such actions. The list of commodities reported up in price jumped from 40 in September to 47 in October.

Inventories continue to be a source of good news, as stocks decreased for the 23rd consecutive month in October, though they did so at a slower rate than in September.

Fleet trends

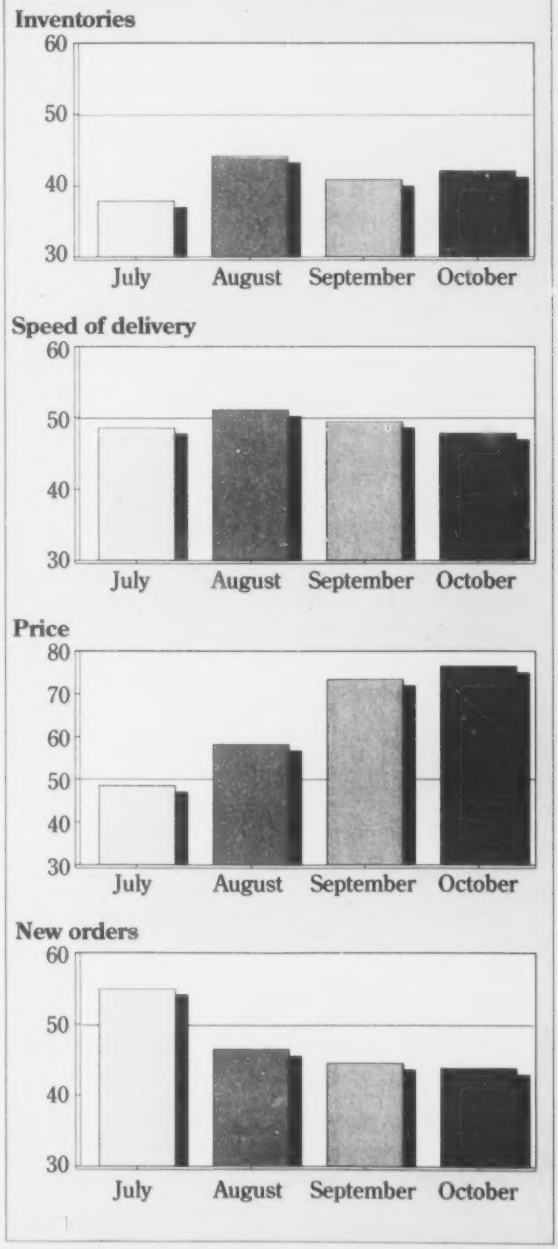
The transition in fleet policies continues, according to Runzheimer International. The Rochester, WI, organization reports that downsizing of staff and cost-reduction concerns are the leading reasons firms reduce their number of company-owned vehicles. Another leading cause, however, is the changing perception as to who should actually be driving these cars.

According to Runzheimer's latest survey, firms are continuing to move away from company cars as a perk, with operational concerns (sales) the leading area of growth. In 1989, 85% of the survey respondents provided vehi-

NAPM procurement trends

(Seasonally adjusted diffusion indexes)

An index where 50 is defined as the neutral level, to the extent a reading is above 50, it represents an expansionary tendency. More particularly, rising inventory prices, and new orders are seen as positive signs of economic growth. A trend towards lower deliveries is similarly interpreted.



cles to sales representatives, which was up from a 79% reading in 1983. This is the mirror situation facing middle-level managers, where only 50% in 1989 received a company car (a decline of 10% from 1983). Even top-level executives haven't been immune. The percentage there is 12% lower than it was just seven years ago.

Fleet managers maintain that cost efficiency is their number one goal. Costs, however, aren't the all-encompassing consideration you might think in selecting a lessor. A large majority of the respondents said they would not compromise service quality in order to save on up-front costs.

No near-term plateauing of higher-trending costs seems likely. Fuel and maintenance expenses keep pushing operating costs higher. On the fixed side, while expenses in the areas of insurance, registration, tax, and depreciation keep stimulating greater costs, new car prices remain the most forceful impetus.

Last year's industry comparisons, in terms of the percentage of respondents involved in fleet leasing, revealed the following: 88% drug and cosmetics, 61% industrial product manufacturers, 61% food and beverage, 59% consumer product manufacturers, 55% chemical & petroleum, 52% insurance, 37% financial institutions, 37% construction and agriculture, and 24% publishing.

LATEST SPOT MARKET PRICES

	Latest price	Previous month	Year ago
FERROUS METALS			
Steel, bars, stainless, 303, cwt	188.00	190.00	179.00
Steel, bars, HR carbon, 1000 series, cwt	19.20	19.20	21.00
Steel, bars, HR carbon alloy, cwt	25.00	25.00	24.50
Steel, bars, CF carbon 12L14, cwt	34.00	34.00	34.50
Steel, plates, carbon, cwt	24.25	23.25	25.20
Steel, plates, strip mill, cwt	23.60	23.60	23.60
Steel, plates, alloy, cwt	34.05	34.05	34.55
Steel, sheets, C.R., class 1, cwt	30.65	30.65	29.65
Steel, sheets, HR, cwt	23.00	23.00	22.25
Steel, sheets, stainless, 304, cwt	124.00	124.00	124.00
Steel, strip, HR carbon, cwt	22.10	22.10	22.10
Steel, strip, CR carbon, cwt	36.18	36.18	38.30
NONFERROUS METALS			
Aluminum, unalloyed ingot, lb	0.80	0.84	0.82
Aluminum, alloyed ingot, 355, lb	1.10	1.10	0.95
Aluminum, secondary ingot, 380, 30000 lb lot	0.75	0.81	0.73
Antimony, lb, merchant	0.88	0.85	0.95
Cadmium, N.Y., dealer, lb	2.20	2.60	4.60
Copper, electrolytic wire bars, lb	1.29	1.42	1.19
Copper, cathode, full plate, lb	1.21	1.31	1.10
Gold, N.Y., troy oz	379.50	389.40	402.90
Lead, common, N.Y., lb	0.41	0.47	0.42
Magnesium, pig ingot, (99.8%), lb	1.63	1.63	1.63
Mercury, 50 fl. lots, N.Y., fl.	205.00	240.00	270.00
Molybdenum, oxide, canned, lb	3.35	3.35	3.32
Nickel, cathode, dealer, lb	3.98	4.20	5.85
Platinum, dealer, oz	429.00	441.00	494.00
Silver, N.Y., troy oz	4.20	4.73	5.20
Tin, N.Y., dealer, lb	2.97	2.75	4.38
Zinc, high grade, lb	0.65	0.73	0.82
Zinc, die casting alloy, No. 3, lb	0.78	0.81	0.74
PAPER (unit=ton)			
Uncoated book #3 offset	940.00	940.00	940.00
Uncoated bond #4, 83 bright	900.00	940.00	900.00
Watermarked bond, 20 lb sheets	1090.00	1090.00	1095.00
Unbleached kraft paper, grocery bag, 30 lb	660.00	630.00	660.00
Bleached kraft, grocery bag, 30 lb	800.00	800.00	800.00
Solid bleached kraft paperboard, folding	830.00	830.00	830.00
Kraft linerboard, 42 lb, domestic, East	370.00	370.00	410.00
Newsprint, 30 lb, East	565.00	565.00	540.00
TEXTILES (unit=lb)			
Acrylic, open-end spun, 1/18	1.50	1.43	1.50
Carded cotton, ring-spun, 18/1	1.58	1.58	1.61
Carded cotton, open-end spun, 18/1	1.43	1.46	1.40
Combed cotton, ring-spun, 100%, 18/1	1.75	1.83	1.85
Nylon, textured, 70/2	2.70	2.70	2.45
Polyester, 50/50% carded cotton, 30/1	1.89	1.73	1.87
Polyester, ring-spun, 100%, 18/1, unbranded	1.53	1.50	1.60
Rayon, high-wet modulus	1.48	1.36	1.34
CHEMICALS			
Acrylonitrile, tanks, lb	0.35	0.35	0.40
Ammonia, anhydrous, tankcars, ton	115.00	100.00	123.00
Benzene, gal	2.15	1.70	1.50
Caustic soda, metric ton	355.00	355.00	320.00
Cresylic acid (over 25%), tanks, lb	0.60	0.55	0.55
Formaldehyde, 37%, (12%-15% meth.),, tanks, lb	0.14	0.14	0.11
Glycerine, synthetic, 96%, tanks, lb	0.76	0.74	0.79
Methanol, syn., barges, Gulf Coast, gal	0.41	0.35	0.50
Naphthalene, crude, tanks, lb	0.17	0.17	0.16
Phthalic anhydride, molten, tanks, lb	0.54	0.39	0.41
Polyethylene resin, low density, lb	0.48	0.40	0.52
Polypropylene, homo-injection, lb	0.46	0.45	0.51
Polystyrene, general purpose grade, lb	0.61	0.56	0.59
Polyvinyl chloride, pipe grade, lb	0.36	0.36	0.44
Soda ash, light 58%, 100 lb, paper bags	155.00	150.00	135.00
Styrene monomer, 99.6%, tanks, lb	0.45	0.43	0.49
Sulfur, dark, Tampa, FL, long-ton	140.00	134.00	142.00
Sulfuric acid, 66%, commercial, tanks, ton	69.89	69.89	66.86
Titanium dioxide, anatase, reg., carlots lb	0.99	1.02	0.95
Xylene, Gulf Coast, spot, barge, gal	1.51	1.50	0.95
BUILDING MATERIALS			
Lumber, 2x4 fir, mbf, cl	337.24	341.33	345.63
Lumber 2x4 pine, mbf, cl	329.35	337.06	321.47
Plyform, 3/4", msf, cl	609.81	645.91	570.00
Plywood, 5/8", msf, cl	365.49	375.20	360.21
Cement, type 1, bulk, ton	62.44	63.22	63.88
Sand, concrete, ton, cl	6.86	6.88	7.17
Ready-mix concrete, 3000 psi/cu. yd.	49.43	49.28	48.81
Crushed stone, base course, ton, cl	6.13	6.29	5.84
Concrete blocks, sand/gravel, 8"x8"x16", per hundred	84.58	84.64	87.17
Reinforcing bars, grade 60; per cwt.	21.96	22.01	22.10
Asphalt paving AC-20, ton	112.07	107.32	108.53
Concrete sewer pipe, 24", per ft, cl	17.94	17.88	18.00
FUELS			
Crude oil (W. TX Int.), bbl	35.50	35.50	20.40
Diesel (reseller rack, Chi.), gal	0.95	0.93	0.51
Heating oil No. 2 (N.Y.), gal, spot	0.90	0.95	0.56
Heating oil No. 2 (Gulf spot), gal, spot	0.89	0.93	0.48
Fuel oil No. 6 (N.Y.), tank car contract	26.90	23.00	18.75
Gasoline (prem unlded N.Y.), gal, spot	1.02	0.99	0.78
Gasoline (reg unlded N.Y.), gal, spot	1.01	0.93	0.59
Kerosene (reseller rack, Chi.), gal	1.07	1.02	0.60
SCRAP MATERIALS			
Aluminum, old sheet & cast, cl	0.45	0.50	0.43
Aluminum, mixed clips, cl	0.52	0.55	0.50
Brass, yellow solids, cl	0.60	0.64	0.57
Copper, No. 1, brass ingot makers', cl	1.01	1.07	0.93
Copper, No. 2, brass ingot makers', cl	0.91	0.95	0.84
Steel, no. 1, hvy., dlvd., Pitts., ton	109.00	113.00	99.00
Steel, no. 1, hvy., dlvd., Chi., ton	112.00	112.00	108.00
Zinc, old, smelters scrap, cl	0.30	0.30	0.35
Zinc, die cast slab, smelters scrap, cl	0.36	0.36	0.37

Sources: Metals Week, American Metal Market, Engineering News-Record (20-city averages), America's Textiles International, Journal of Commerce, Chemical Marketing Reporter, Pulp and Paper Week.

* This page has been revised to better serve you.

Purchasing salaries throw some curves

This year, *PurchasingWorld*'s annual salary survey produced some surprizes: for example, average raises for our respondents came in at 5.25%, better than the cost of living. Salary numbers made swings, and in some job categories were *lower* than our December, 1989 survey showed. Those swings seemed odd, in light of the reported raise percentage. That 5.25 raise average is in line with expectations—until recently—and matches what we've found in followup phone interviews with purchasing experts around the country.

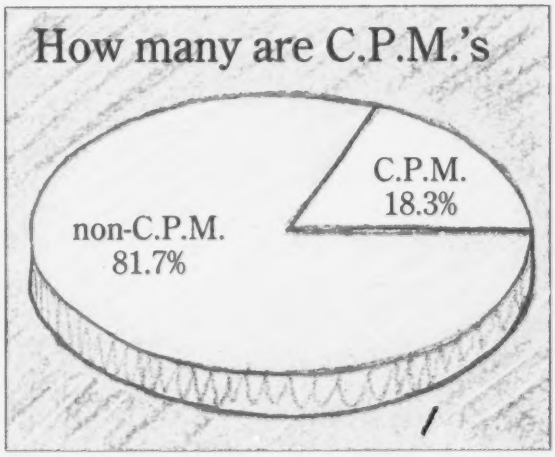
To understand the variations, we sought the counsel of cooler heads—and those better acquainted with statistical shortcomings—our chief economic editor, John Sheridan, and resident research guru, Peter Young.

The answers were actually simple: there is always the plus-or-minus factor in statistics, known as the standard deviation or "confidence factor." And our survey results fall within that range.

There is also the possibility that many lower-salaried people have been brought into the category, or there are fewer *highly* paid people in it. Looking through the overall survey report, it appears that the former is the case—there were a number of surprisingly low salaries reported.

Then we have to try to understand why that is. Is purchasing as a function going through a weeding-out phase? In a sense, that would parallel many businesses' experience today. Call it streamlining or selective retention or whatever, lean and mean is the watchword of today. Businesses ask themselves, "How can we do more with less (or with fewer people)?"

A recent *PurchasingWorld* postcard survey gave strong indications that purchasing departments *are* being downsized around the country.



There's always a silver lining, of course: this means that there is some room being created for *entry-level* people in purchasing. And to add further encouragement to those looking at a career in purchasing, see Editorial Consultant Paul Farell's story ("Old pro pitches purchasing") in this issue.

That's what seems to be happening here. And reflecting the slow-growth business conditions, the reporting of bonuses in the 1990 survey is down—and in many cases, bonuses just aren't being given. (After the question on bonuses, a few respondents wrote "Hah!" or similar comments.)

Before we check the survey results, here is a brief look at the methodology *PurchasingWorld* employs. We send questionnaires on an *nth* name basis to our A list of subscribers—those with job titles in the executive category. The percentage of respondents in 1990, while down slightly from last year, was still quite good for a mail survey.

Let's look at the numbers

Junior buyers this year reported average raises of 4.8%, with the resulting salaries averaging $20,895. This compares with last year's $21,000 salary and a *12%* raise. Bonuses in this category were negligible, as can be expected in entry-level positions.

Buyers comprise one of our largest categories, and are therefore a matter of some concern, with an average reported salary in 1990 of $29,900 and average raises of 4.6%. Last year the number was $37,640, and while the standard deviation allows for such a variation, there's too great a swing here not to raise some eyebrows. Bonuses in this category, as in all others, were substantially lower, at an average of $1,373. (Last year's bonus figure was $7,000.) A closer look shows this category, as mentioned above, weighted by newer workers and lower salaries.

Senior buyers came in at $38,704 in average salary, with a 4.2% raise over the previous year. Here there is no adequate comparison to last year, when only one respondent placed himself in this category. Although it simplified tabulation, he was making $60,000 as the result of a 7% raise—hardly a benchmark for study.

Purchasing managers tallied a minuscule loss, to $45,260, from 1989's $46,621. Raises this year were down, too, with 6.4% for 1990 comparing with the year-ago 7%. Bonuses averaged just under $2,000—at $1,986—compared with 1989's $6,600.

Directors of purchasing salaries averaged $61,726 in 1990, compared

by Ron Stevens, managing editor

with $57,393 in 1989. Raises this year increased an average of 5.85%, slightly below last year's 6.2%. Interestingly, if last year's average salary gets this year's average raise, the resulting number is $60,951—a good cross check.

Vice presidents of purchasing reported average raises of 4.2% (compared with last year's 8.1%) and an average salary of $74,252. 1989's number was substantially less, at $61,091, although bonuses went from $16,500 last year to $10,902 in 1990. Total compensation, then—on average—didn't increase as much as it might at first seem.

Materials managers' salaries went higher, too, from an average $46,574 in 1989 to $53,063 in 1990. Average increases went from 6.4% last year to 4.75% this year. Bonuses dropped, too, from an average of $10,600 to $3,980.

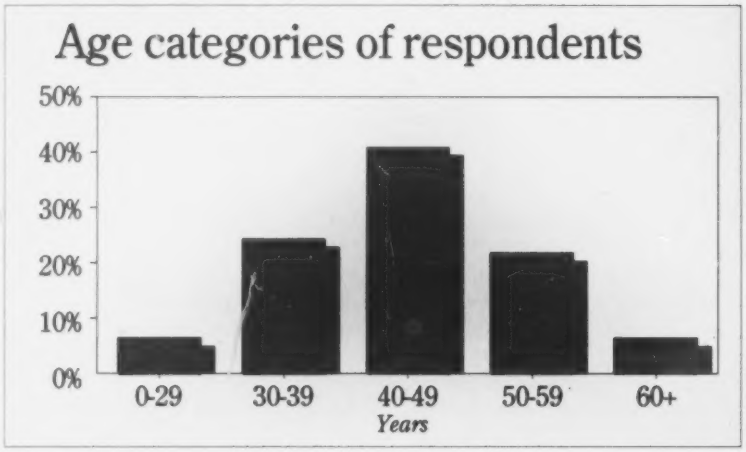
Directors of materials reported an average salary of $62,223 in 1990, virtually unchanged from 1989's $62,852. The average raise was 6.25% this year, compared with 6.8% last year.

Women in the survey

The top salary reported in this year's survey was $165,000, by a 36-year-old woman who identified herself as a "commercial director." Although she got no bonus, she still carried away top compensation honors.

As far as women in general are concerned, 18.2% of our respondents were females and, as you could guess they are, on average, not as well paid as their male counterparts. In the job categories where they showed up in appreciable numbers, their salaries were almost without exception at or below the category average. Bonuses were reported as being about equal, however, showing that there is at least *some* area where equality prevails.

In overall numbers, women had an average salary of $32,740 in the 1990 survey; last year the figure was substantially higher, at $44,837, with the high already mentioned and the low at $13,800. That year-to-year average difference could be explained, in part, by the fact that only 8% of the 1989 respondents were women. And by comparison to women's salaries, men responding to this year's survey averaged $51,361, with a high of $145,000 and a low of $16,800.

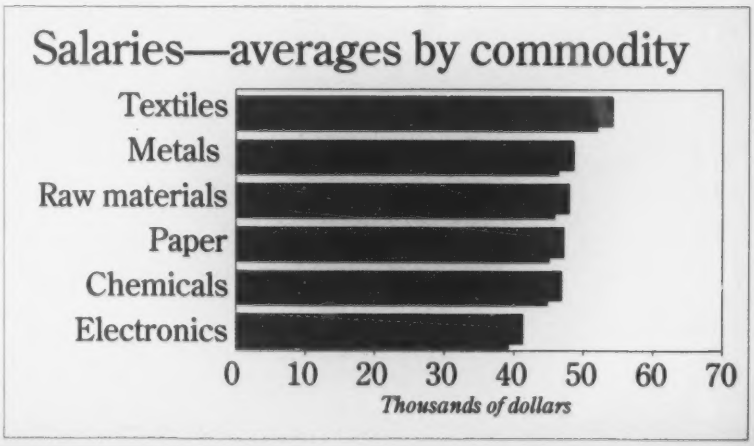


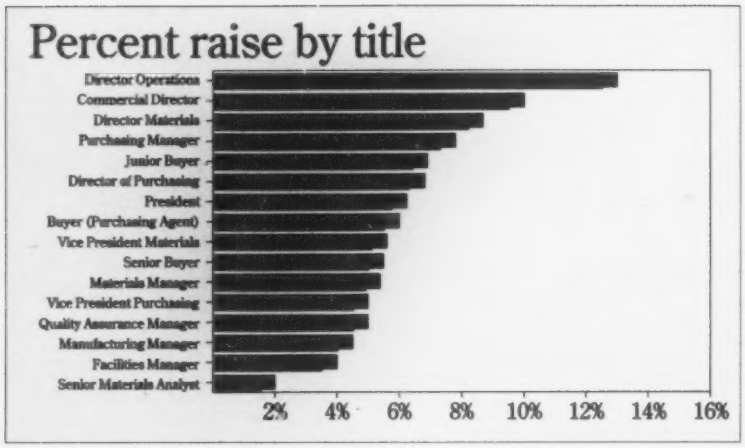
Turning to another minority, certified purchasing managers (C.P.M.s), our survey responses indicate that they are in almost the exact same proportion as women—18.3% of the total. An interesting sidelight of our research was that C.P.M.s were clustered tightly in the age range from 37-50—63%, with a thin spreading of certified people above 50, and the larger remainder in their early 30s.

The salary difference for C.P.M.s was one worth noting, for those purchasing pros who are in the process of earning certification—or are thinking of doing so: the average salary for C.P.M.s responding to our survey was $52,850; for those without that professional credential, the average salary was $47,065.

In the same vein, another area worth noting is the result of cross-tabulating education levels and salaries. The average salary for high school graduates (17% of respondents) was reported by our respondents as $35,540. Keep in mind that many of these responses are from people who have many years' experience in purchasing. The top salary here was $73,500.

Respondents with two-year degrees (16.8%) reported an average salary of $41,107; top salary was





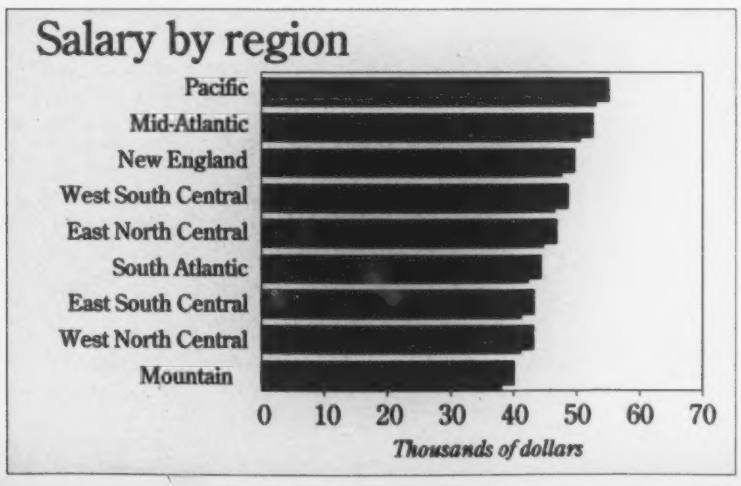
$105,000. Liberal arts graduates brought in an average of $44,109 (they comprised 10.3%), and their top salary was $87,000.

The largest response in the education category came from business-degreed respondents (almost 30%), who earn an average $50,762, with a high of $125,000. Other undergraduate degrees (9.2%, which included electrical and other engineers) earn on average $53,834, from a high of $98,000. MBAs (11.2% of respondents), with a top figure of $130,000, averaged $63,506, and other graduate degrees (nearly 5%) reported an average salary of $64,675. The top salary reported is a graduate degree holder in a non-business discipline, by the way.

The average age of all respondents was 44.4; average high salary was $72,000, and average low was $22,000.

Just over half of the respondents were located at their company's corporate headquarters, 25.7% were divisional employees, and 23% held jobs at plant locations. (In the case of respondents from some smaller companies, corporate and plant locations were the same; our tallying method was to simply count those as corporate responses.)

The good news is that raises were common and averaged more than the cost of living. The not-so-good news is the thinning out of top salaried jobs. Next year—and even 1992—should tell us all whether this is a trend or a statistical hiccup. ***PW***



Continued from pg. 30

list in its office which is made available to recruiters. A positions available list is sent to members who are actively looking for a new position and who have a resume on file in the office. Recruiters fax or mail their job listings to the office.

Contact: Chris Loup, PMA of Boston, 747 Main St., Concord, MA 01742; tel: (508)371-2522

Carolinas/Virginia

The PMA of Carolinas/Virginia, the second largest affiliate after Boston, offers a no-fee service for members. Duplicates of resumes are sent to personnel recruiters and companies looking for qualified purchasing professionals. A cover letter is requested as well as information about location and salary range desired, education and commodity experience. Begun within the last year, the service currently numbers about 100 resumes on file.

Contact: Betty Hempstead, PMA of Carolinas/Virginia, P.O. Drawer V-2, Greensboro, NC 27402

Orange County, CA

N.A.P.M. Orange County Inc. has offered a resume listing and positions available listing service for a number of years. Recently, it began building a computerized database of resumes which will be helpful because it will tend to surface location and salary matches.

Orange County publishes listings in its newsletter every month and picks up some positions-available listings throughout California from national through N.A.P.M. Services. According to Chuck Ayres, the Orange County PMA encourages an open door policy with search firms under strict terms of confidentiality and will even work with non-members in their job search. "After all," says Mr. Ayres, "many of them will become good members if we help them along on their career path."

Contact: Chuck Ayres, N.A.P.M. Orange County Inc., 1403 North Batavia St., Orange, CA 92667-3504; tel: (714) 532-0170 ***PW***